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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,925	07/28/2004	Jann Schmidt	255898US0PCT	2156

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EXAMINER	
CHANG, VICTOR S	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
05/12/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/501,925	SCHMIDT ET AL.	
	Examiner	Art Unit	
	Victor S. Chang	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Applicants' amendments and remarks filed on 3/14/2008 have been entered. Claim 20 has been amended. Claims 1-20 are active.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. In response to the amendments, the grounds of rejection have been updated as set forth below. Rejections not maintained are withdrawn.

Rejections Based on Prior Art

4. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being obvious over Khanarian [UA 5881201].

Khanarian relates to a light guide for backlighting liquid crystal displays. Figs. 3A and 3B illustrate that the light guide has at least one light-entry surface (from the left side in the drawings) and at least one light-exit surface (shown by the arrows exiting the upper surface of the body), the ratio of the light-exit surface area to the light-entry surface area being at least greater than 4. The light guiding layer comprises at least 60% by weight of polymethyl methacrylate, from 0.001 to 0.08% by weight of spherical particles, which has an average diameter in the range of from 0.3 to 40 microns, and the light-exit surface of the light-guiding layer is provided with structurings [col. 4, lines 5-43; col. 5, ll. 1].

For claim 1, the term "structurings" is interpreted as a roughened surface structure functioning as a diffuser for an improved light uniformity or luminous distribution [specification, page 14, line 11 and 29-30]. Since Khanarian teaches that a diffuser may be used, and mechanically roughened diffuse scattering plates (diffusers) are widely used for improved light uniformity [col. 2, ll. 37; col. 3, ll. 61-66], Khanarian's diffuser reads on the structurings of the claimed invention, and a workable depth of the roughened surface is deemed to be an obvious routine optimization to one skilled in the art of light displays.

For claim 2, the ratio of at least 20, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Khanarian by providing the ratio of at least 20 because figures 3A or 3B shows the light exiting surface to be comparatively much larger that the light entry area, based on optimization through routine experimentation, for optimum light scattering properties.

For claim 3, the thickness of the light guiding layer of 1-4 mm [col. 6, ll. 31-33].

For claims 4-5, the particles can be of plastic, such as polystyrene [col. 4, ll. 36].

For claim 6, Fig. 3B shows the light-exit surface having a uniform structuring.

For claim 7, the non-uniform structuring is shown in figure-3A by the wedge shaped surface.

For claim 8, Figs. 3A and 3B shows that the light exit surface structuring is in line or point form.

For claim 9, the methyl methacrylate is at least 90% of the light-guide body [col. 5, ll. 1].

For claim 10, the average diameter of the particle is in the range of 0.01-10 micron.

For claim 11, Khanarian teaches that the particles is present in an amount of 0.01% by weight [col. 5, ll. 1].

For claims 12-13, the refractive index of light guiding layer and the light transmission % are inherent to the same material of polymethyl methacrylate.

For claim 14 is shown in Fig. 3A.

For claim 15, the at least one surface, which is parallel to the light entry surface is configured to be a reflective layer because the surface opposite the light entry surface is not shown to permit light exiting, or in the alternative, the edge surface of the reflective layer in figures 3A and 3B at the entry surface is found to be parallel to the light entry surface.

For claim 16, the light guide body is made by molding.

For claim 17, he components (C) and (D) are interpreted to be zero and the components (A) and (B) are disclosed by Khanarian.

For claim 18, the light source is shown in figures 3A and 3B as CCFL, which is fluorescent light.

For claim 19, the structurings depth from 1-100 microns would have been an obvious routine optimization to one having ordinary skill in the art as set forth above.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khanarian in view of Japanese: 2000-13677 [English Abstract].

The teachings of Khanarian are again relied upon as set forth above.

Khanarian lacks a teaching that useful scattering particles include barium sulfate particles. However, the JP '677 teaches a light guide containing barium sulfate particles as the light diffusing medium. It would have been obvious to one having ordinary skill in the art to

substitute barium sulfate particles, for the particles in Kanarian because selection and substitution of a known functionally equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07.

Response to Arguments

7. Applicants argue at Remarks page 7 that

> "the Examiner appears to be suggesting that the structurings of the present claims are inevitable defects resulting from manufacture of articles of the type claimed herein and disclosed by Khanarian. However, they are not and Applicants have not disclosed, at page 14 of the specification or elsewhere, that they are."

However, applicants own specification page 14 teaches that "structurings" include "defects". Nevertheless, upon a careful review, since specification page 14 also discloses that "structurings" provides uniform luminous distribution, the "structurings" are alternatively read upon by a surface roughened diffuser of Khanarian, and the depth of roughness is deemed to be an obvious routine optimization to one skilled in the art of light display.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794